MULTIMEDIA **UNIVERSITY**

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FINAL EXAMINATION

TRIMESTER 1, 2016/2017 SESSION

TWS 2551 – Web Services
(All sections / Groups)

20 OCTOBER 2016
9.00 a.m - 11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of 5 pages only.

2. Attempt **FOUR** out of FIVE questions. All questions carry equal marks and the distribution of the marks for each question is given.

3. Please write your answers in the Answer Booklet provided.

Question 1

a) Draw the Web Service technical stack and briefly explain each layer. [4 marks]

b) What happen if we do not have WSDL and UDDI? Can we still call the functions? [3 marks]

c) Why it is difficult to extract information from HTML page? [1 mark]

d) Why do we need to have attributes in XML whereby all the data can be stored using elements? Provide an example to help justify your answer. [2 marks]

Question 2

Continued......

a) Write the DTD for the above website. [4 marks]

b) Write the XML Schema that is equivalent to the DTD in question 2(a). [4 marks]

c) Write one (1) XML document that conforms to the DTD in question 2(a). [2 marks]

Question 3

a) What happen if the SOAP request cannot be processed by the Service Provider? List down two possible causes. [3 marks]

b) Why do we need namespace in an XML document? How does namespace works? Why do we need to refer the prefix to URL value and what normally does the URL contains? [5 marks]

c) Why UDDI is less popular as compared to third party repository? [2 marks]

Question 4

a) What are the functions of XSLT? [2 marks]

b) Consider the following C# code.

```
[WebMethod]
public string purchaseItem(string name, float price, string[] description)
{
  // implementation omitted
}
```

Write the SOAP request for the above web method. [4 marks]

c) Write the SOAP response for the above web method. [4 marks]

Continued......

Question 5

```xml
<?xml version="1.0" encoding="utf-8"?>
<wsdl:definitions xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:mime="http://schemas.xmlsoap.org/wsdl/mime/" xmlns:tns="http://tempuri.org/"
xmlns:s="http://www.w3.org/2001/XMLSchema"
xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/"
xmlns:http="http://schemas.xmlsoap.org/wsdl/http/"
targetNamespace="http://tempuri.org/" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:types>
    <s:schema elementFormDefault="qualified" targetNamespace="http://tempuri.org/">
      <s:element name="PiValue">
       <s:complexType />
      </s:element>
      <s:element name="PiValueResponse">
       <s:complexType>
        <s:sequence>
         <s:element minOccurs="1" maxOccurs="1" name="PiValueResult"
type="s:double" />
        </s:sequence>
       </s:complexType>
      </s:element>
      <s:element name="abs">
       <s:complexType>
        <s:sequence>
         <s:element minOccurs="1" maxOccurs="1" name="x" type="s:int" />
        </s:sequence>
       </s:complexType>
      </s:element>
```

Continued......

```xml
        <s:element name="absResponse">
          <s:complexType>
            <s:sequence>
              <s:element minOccurs="1" maxOccurs="1" name="absResult" type="s:int" />
            </s:sequence>
          </s:complexType>
        </s:element>
        <s:element name="string" nillable="true" type="s:string" />
        <s:element name="double" type="s:double" />
        <s:element name="int" type="s:int" />
      </s:schema>
    </wsdl:types>
    <wsdl:service name="Service">
      <wsdl:port name="ServiceSoap" binding="tns:ServiceSoap">
        <soap:address
location="http://venus.eas.asu.edu/WSRepository/Services/BasicThree/Service.asmx" />
      </wsdl:port>
      <wsdl:port name="ServiceSoap12" binding="tns:ServiceSoap12">
        <soap12:address
location="http://venus.eas.asu.edu/WSRepository/Services/BasicThree/Service.asmx" />
      </wsdl:port>
      <wsdl:port name="ServiceHttpGet" binding="tns:ServiceHttpGet">
        <http:address
location="http://venus.eas.asu.edu/WSRepository/Services/BasicThree/Service.asmx" />
      </wsdl:port>
      <wsdl:port name="ServiceHttpPost" binding="tns:ServiceHttpPost">
        <http:address
location="http://venus.eas.asu.edu/WSRepository/Services/BasicThree/Service.asmx" />
      </wsdl:port>
```

Continued......

        </wsdl:service>
        </wsdl:definitions>

a) Refer to the WSDL in Question 5. How many functions were listed in the WSDL? List down all the methods together with the parameters and the return type. [3 marks]

b) Refer to the WSDL in Question 5. What is the class name of the service and where is the service located? [2 marks]

c) What is the difference between RPC and document style? [2 marks]

d) Please state the three benchmarking used to measure the quality of service. [3 marks]

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